

# *Aethiopsestis* gen. nov. (Lepidoptera), first record of Thyatiridae from the Ethiopian Region

by

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## INTRODUCTION

Until the recent discovery of material from Tanganyika, Southern Rhodesia and South Africa, the family Thyatiridae has been unknown in the Ethiopian Region though well known from the rest of the Old World, the Nearctic and from one Neotropical species of *Thyatira* Ochsenheimer, 1816 (see Forbes, 1936: 779-800). *Thyatira achatina* Weymer (1896:90) an African species which was at one time classified as a thyatirid (von Dalla Torre, 1921:6) was shown to be a noctuid by Hampson (1910:650) and designated as type-species of the genus *Thyatirina*. Three new African species are described in this paper.

**TREATMENT:** The species of *Aethiopsestis* are fully described and the moths and genitalia figured. The scale placed by each figure or group of figures represents one millimetre. The plates were prepared from photographs taken by the Photographic Section of the British Museum (Natural History). Measurements are given in the following form: mean of the measurements of the fore wing (measured from apex to middle of mesoscutum, with anal margin at right-angles to the longitudinal axis of thorax); range of measurements; number of specimens measured. References given in the text are in an abbreviated form; the full reference appearing at the end of the paper.

Genus *AETHIOPSESTIS* gen. nov.

(Gender: feminine)

Type species: *Aethiopsestis austrina* spec. nov.

**DESCRIPTION:** ♂ and ♀. Head and palpi (text-fig. 9) greyish-buff; antennae lamellate (text-fig. 9).

Thorax greyish-buff or buff dorsally with two dark transverse lines anteriorly and pair of oblique brownish lines. Ventral surface of thorax greyish-buff or grey. Venation of wings as in text-fig. 1. Upper surface of fore wing pale buff or greyish-buff; usually with two or three dark basal fascia, broad pale medial

fascia, dark postmedial fascia, pale subterminal fascia and narrow dark terminal fascia; veins between subterminal and outer margin marked with dark scales; fringe mainly pale, but dark at ends of veins; dark streak usually present immediately posterior to pale apical area, oblique distally then parallel to costal margin of wing; second dark streak passing through middle of cell from near base of wing to near outer margin; third dark streak usually present parallel to and between  $Cu_{1b}$  and 1A, from base to outer margin. Upper surface of hind wing brownish-grey or buff distally, usually very pale proximally; poorly marked, pale, medial band distal to end of cell continuous with pale medial band of forewing; fringe as in fore wing. Under surface of hind wing pale buff or grey-brown, variously marked.

Abdomen pale buff speckled with grey posterior to segment 1 or 2; with conspicuous tuft of dark grey-brown, raised scales on dorsal surface of segment 3 (not seen on the few available female specimens).

♂-GENITALIA: Tegumen very strongly developed. Vinculum short. Saccus poorly developed. Valves with clearly differentiated costa and sacculus; sacculus with variously shaped carinae. Juxta small, strongly sclerotized, paired annellus in *austrina* and *mufindiae*, single trilobed structure in *echinata*; continuous laterally with costa of valve. Uncus with one medial and two lateral setose processes, as in most Thyatiridae, and except in *mufindiae* a further two non-setose processes placed one at each side of medial process; dorsal surface of uncus with simple or paired, digitate medial process. Aedeagus with or without cornuti; apex spinose in *mufindiae* and *austrina*. Segment 8 little modified, posterior margin of tergum and sternum weakly concave.

♀-GENITALIA: KNOWN only from *austrina*, see page 260.

DISCUSSION: *Aethiopsestis* is possibly most closely related to *Mimopsestis* Matsumura (1921:855) (type-species *Palimpsestis basalis* Wileman, by original designation and monotypy). The ♂-genitalia of *A. mufindiae* quite closely approach those of *M. basalis* (Wileman) in the general structure of the valves, anellus and uncus. Externally the upper surface of the wings of *M. basalis* is similar to that of *Aethiopsestis* but differs in the conspicuous dark brown basal area, the broader medial band on the fore wing and the absence of raised scales on the discocellular vein and at the base of the fore wing. The venation of both fore and hind wings of *M. basalis* differs from that of *Aethiopsestis* in that  $M_2$  arises from the cell closer to  $M_1$  than to  $M_3$ .

The three new species described in this paper are *austrina*, which is represented by two subspecies, from Southern Rhodesia and Cape Province respectively; *echinata* from Southern Rhodesia, and *mufindiae* known only from Tanganyika. Of these three species *austrina* and *echinata* possibly have closest affinities and can be separated from *mufindiae* in the ♂-genitalia by the presence of five posterior processes on the uncus, a paired anellus (see text-figures) and by differences in the aedeagus.

*Aethiopsestis austrina* spec. nov., plate 4, figs. 1-4, plate 5, figs. 1 and 2, text-figs. 1-5

DESCRIPTION: ♂ and ♀. Inner surface of palpi greyish-buff, outer surface greyish-brown. Head greyish-buff, with dark brown collar at posterior margin (most conspicuous laterally).

Thorax greyish-brown or buff dorsally with pair of oblique brown lines and two dark brown transverse lines anteriorly. Ventral surface grey or greyish-buff (holotype). Tibia of fore leg with two dark brown spots on front surface. Upper surface of wings pale buff (holotype) or greyish-buff; dark brown spot at base

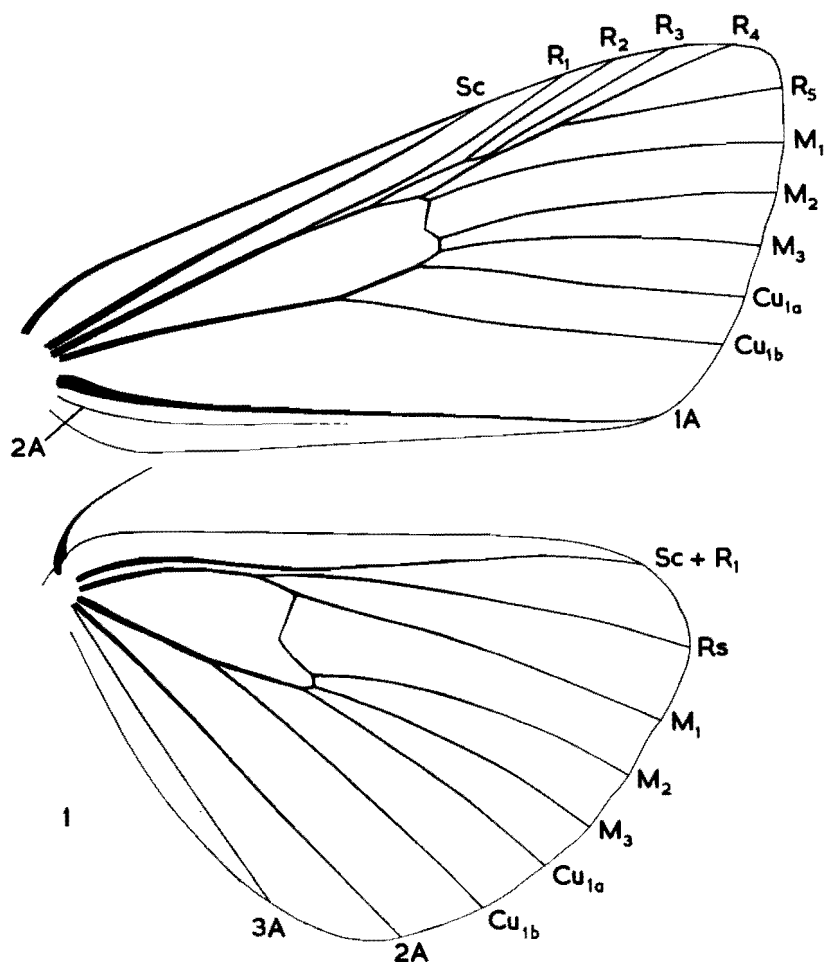


Fig. 1. *Aethiopsestis austrina* spec. nov., venation of fore and hind wings.

of cell; two or three very poorly marked basal fasciae; medial band usually well marked and usually paler than rest of wing (e.g. holotype), nearly white in two specimens (pl. 4, fig. 2), hardly discernible in three specimens of subspecies *nebulosa*; poorly marked dark postmedial fascia and whitish subterminal fascia; dark streaks parallel to main veins usually as in holotype (pl. 4, fig. 1), but strongly marked in one specimen of *austrina nebulosa* (pl. 5, fig. 1). Pattern of upper surface of hind wing as in figure. Under surface of wings pale greyish-buff; usually poorly marked in *austrina austrina* but strongly marked in *austrina nebulosa*.

♂-GENITALIA: (text-figs. 2 and 3): valve with bicarinate sacculus; annellus with pair of stout heavily sclerotized, arcuate processes; uncus with three setose processes, two irregularly shaped non-setose processes (shape of latter subject to slight individual variation) and single, short, digitate lobe dorsomedially; vesica of aedeagus with single patch of slender spines.

♀-GENITALIA (text-figs. 4 and 5): abdominal segment 8 particularly heavily sclerotized; ovipositor lobes with sclerotized region between them; ventral surface of segment 8 densely clothed with minute spines; signum an elongate patch, interrupted in one female specimen of *nebulosa*.

DISTRIBUTION: The nominate subspecies is known only from the Vumba Mountains of Southern Rhodesia, and *nebulosa* from the Cape Province and Natal (South Africa).

AFFINITIES: Probably most closely related to *echinata*. (See generic description.)

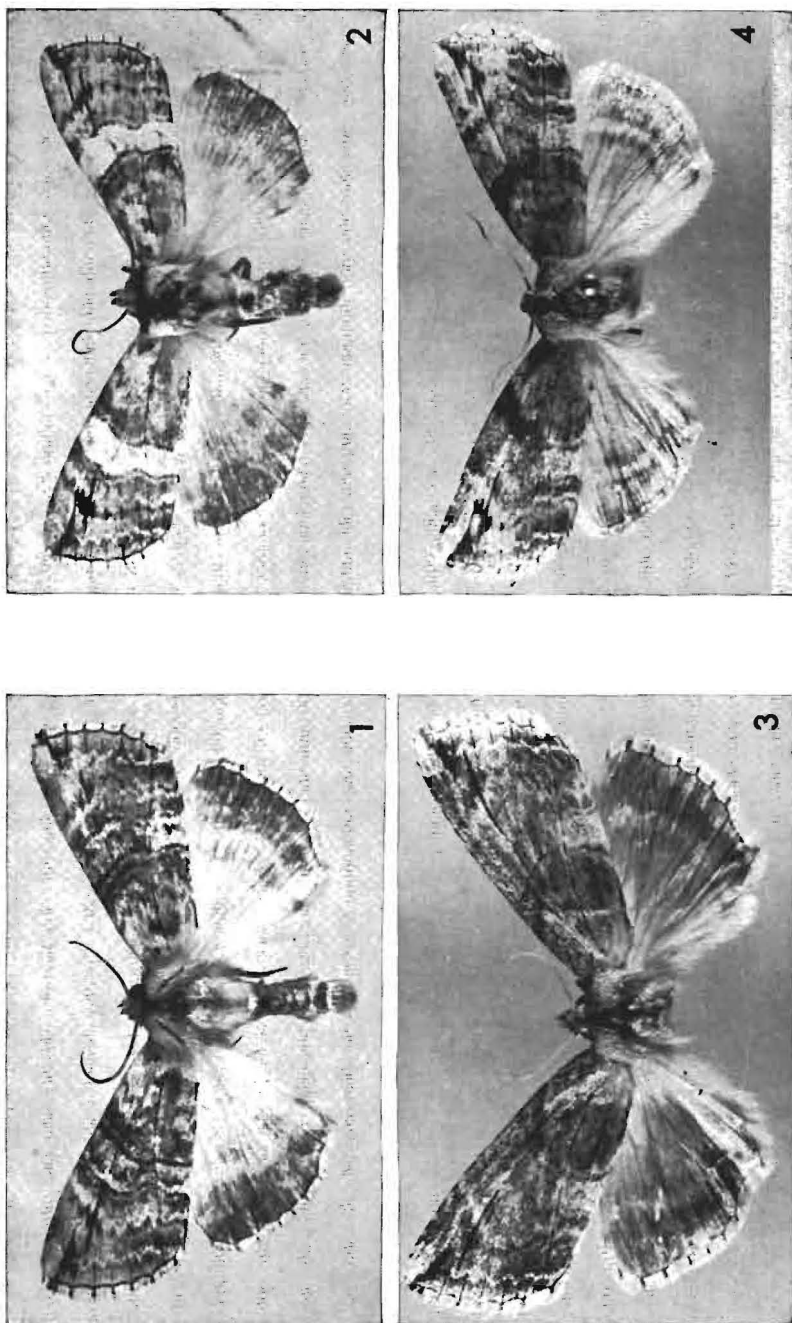
*Aethiopsestis austrina austrina* subsp. nov., plate 4, figs. 1 and 2, text-figs. 2 and 4

DIAGNOSIS: ♂ and ♀. Distinguished from *nebulosa* by the more distinctly marked transverse fasciae on the upper surface of the fore wing in most specimens, and by the presence distally of only weakly marked transverse fasciae on the under surface of both wings. In the ♂-genitalia this subspecies is separated from *nebulosa* by the differently shaped valve apices and carinae, the evenly tapered processes of the anellus, the less strongly convoluted non-setose processes of the uncus, and the distinctively shaped medial process of the uncus. The shape of the ventral sclerotized regions of abdominal segment 8 serves to distinguish the ♀-genitalia of the nominate subspecies.

Measurements: ♂, 19.5-22.0 mm (6), ♀, 23.0 mm. (1).

Material examined: ♂-Holotype, Vumba (S. Rhod.), 19.III.1961 (B.D. Barnes); Thyatiridae genitalia slide No. 196, B. M. negative No. 36945, in the British Museum (Natural History); paratypes: four ♂♂ and one ♀, Vumba, March 1936, 24.III.1960, 20.III.1961, 4.IV.1962 (B. D. Barnes, J. E. Drysdale), in the British Museum (Nat. Hist.); one ♂, Vumba, 10.IV.1959 (B. D. Barnes), in Barnes collection; one ♂, Vumba, 19.III.1928 (Pas), in National Museum, Bulawayo.

PLATE 4



*Aethiopsestis austrina* spec. nov.

Figs. 1 and 2. *Ae. austrina austrina* subsp. nov. 1. ♂-holotype; 2. ♂-paratype.

Figs. 3 and 4. *Ae. austrina nebulosa* subsp. nov. 3. ♀-paratype; 4. ♂-paratype.

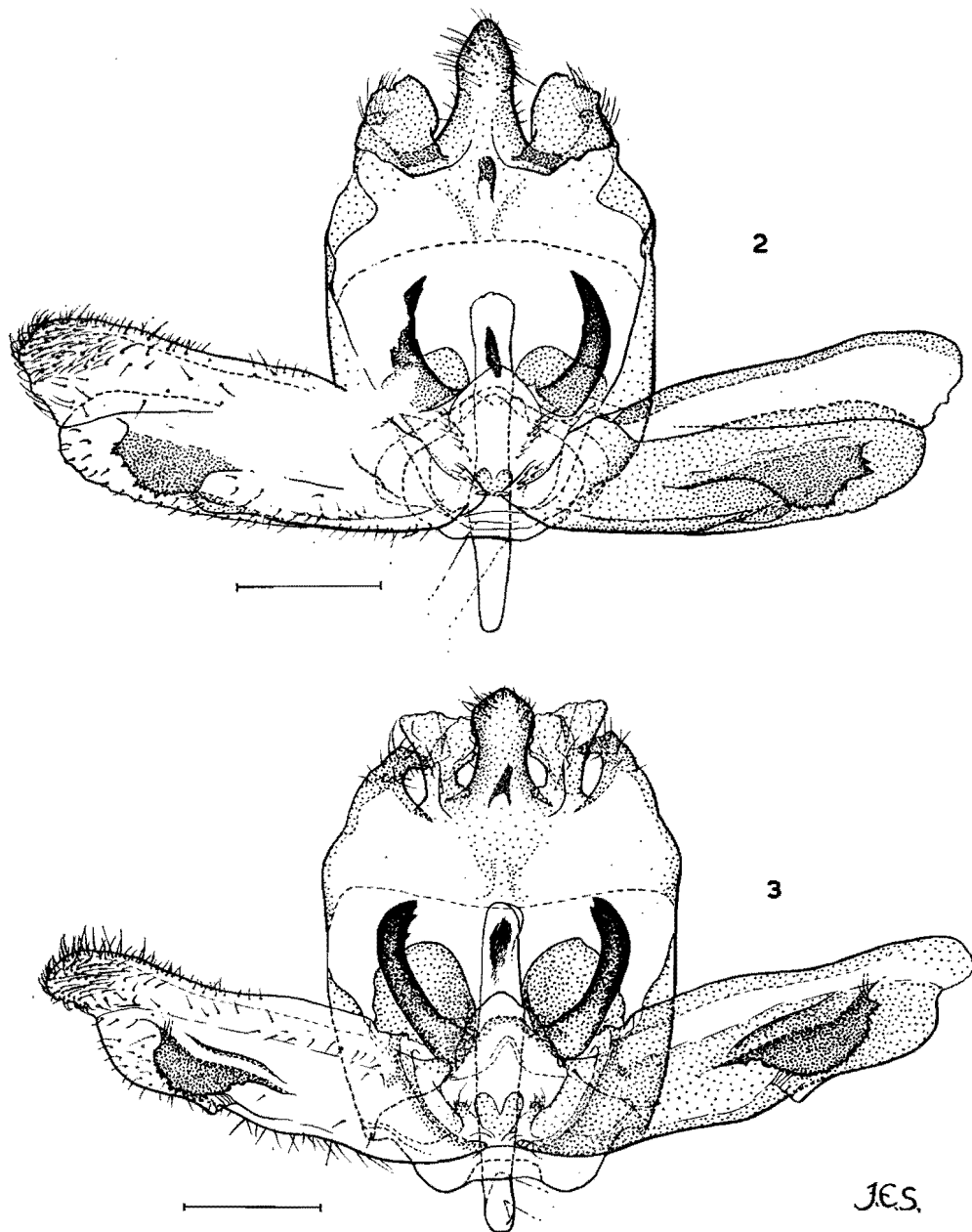


Fig. 2. *Aethiopsestis austrina austrina* subsp. nov., ♂-genitalia. Fig. 3. *Ae. austrina nebulosa* subsp. nov., ♂-genitalia.

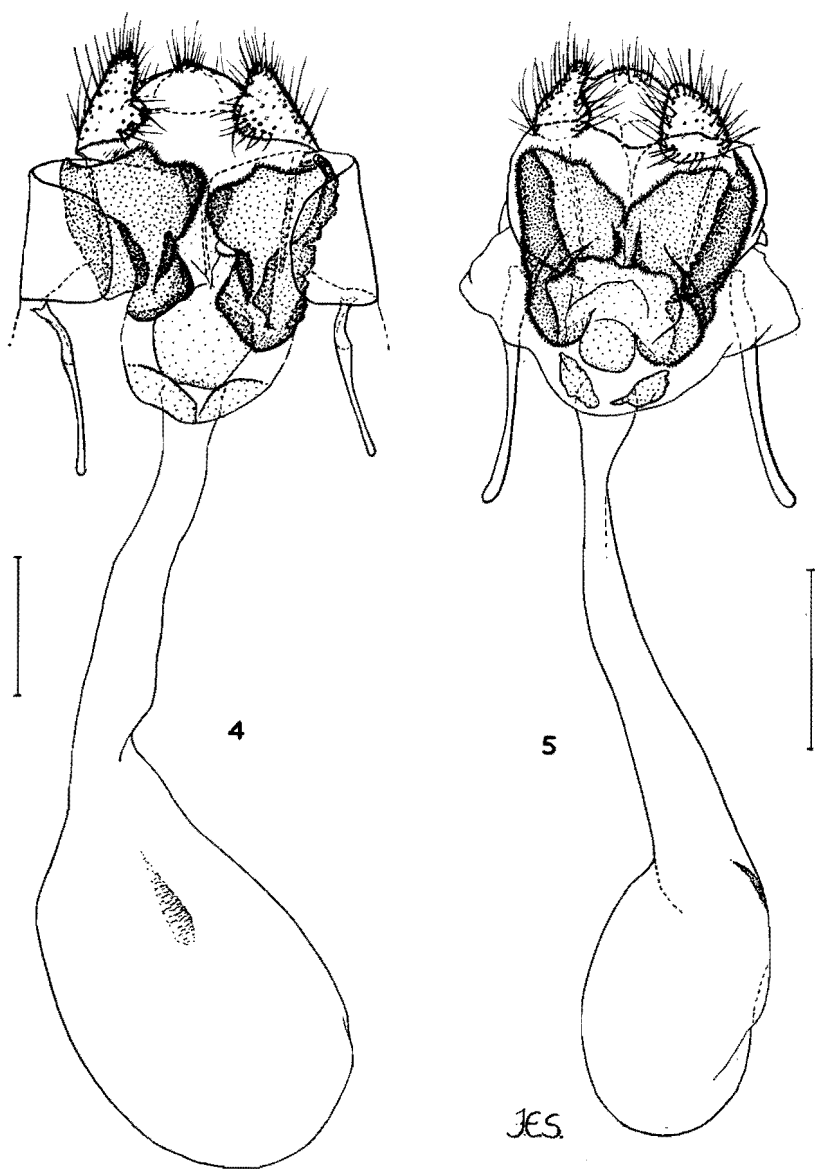


Fig. 4. *Aethiopsestis austrina austrina* subsp. nov., ♀-genitalia. Fig. 5. *Ae. austrina nebulosa* subsp. nov., ♀-genitalia.

*Aethiopsestis austrina nebulosa* subsp. nov., plate 4, figs. 3 and 4, plate 5, figs. 1 and 2, text-figs. 3 and 5

DIAGNOSIS: ♂ and ♀. Most specimens of this subspecies have a poorly marked upper surface wing-pattern. Also contrasting with the nominate subspecies is the pattern of the under surface of the wings. The under surface of the fore wing proximally is grey-brown (darkest in broad band proximal to dentate subterminal fascia) except for a pale greyish-buff band distal to subterminal fascia, and the hind wing similar except that the area proximal to the broad grey-brown band is pale greyish-buff posterior to the cell. The genitalic differences between this and the nominate subspecies have been listed under the latter.

Measurements: ♂, 19.0-20.5 mm (3); ♀, 22.0-25.5 mm (3).

Material examined: ♂-Holotype, Highlands (Albany Distr., S. Afr.), 28.III.1950 (J. S. Taylor); Thyatiridae genitalia slide No. 3, B.M. negative No. 32520, in the British Museum (Natural History); paratypes: two ♂♂ and three ♀♀, Highlands, 5.IV-13.V.1949, 21.III.1950 (J. S. Taylor), in the British Museum (Nat. Hist.); six ♂♂ and eight ♀♀, Highlands, 22.II-4.IV.1948 and 13.IV-2.V.1949 (J. S. Taylor), and one ♀, Balgowan (Lion River Distr., S.Afr.), 1.III.1950 (K. M. Pennington), in the Transvaal Museum.

Foodplant: *Royena pubescens* Willd., Ebenaceae.

*Aethiopsestis echinata* spec. nov., plate 5, figs. 3, text-fig. 6

DESCRIPTION: ♂. Head and outer surface of palpi greyish-buff. Posterior margin of head with pale buff collar dorsally, fringed with grey laterally and ventrally.

Dorsal surface of thorax pale greyish-buff, with two dark greyish-brown transverse lines anteriorly, pair of brown oblique lines dorsolaterally, and two dark greyish spots dorsomedially continuous posteriorly with dark grey medial line. Ventral surface of thorax pale greyish-buff, darkest anteriorly. Colour of fore leg doubtful. Ground-colour of upper surface of fore wing greyish-buff with poorly marked pale grey medial band edged with dark grey and poorly marked pale brown postmedial and subterminal fasciae; dark streaks parallel to veins and posterior to buff apical patch very dark brown. Upper surface of hind wing very pale buff, almost white, with broad pale grey transverse terminal band and narrow medial band, the two enclosing pale band continuous with pale grey medial band of fore wing. Under surface of fore wing pale grey, darkest distally; with broad, diffusely marked postmedial fascia. Under surface of hind wing slightly darker than upper surface, speckled with grey scales anteriorly.

♂-GENITALIA (text-fig. 6): valve with bicarinate sacculus; anellus lobes densely spinose; uncus with three setose processes (two irregularly shape non-setose processes, and single, bifurcate dorsomedial process); vesica of aedeagus with patch of numerous slender spines.

♀. Not known.



*Measurements:* ♂, 21.0 mm (1).

*Material examined:* ♂-Holotype, Salisbury (S. Rhod.) 10.IV.1960 (A. J. Duke); Thyatiridae genitalia slide No. 2; B. M. negative No. 34523; in the National Museum, Bulawayo.

*DISTRIBUTION:* Known only from Southern Rhodesia.

*AFFINITIES:* Probably no more closely related to *mufindiae* than to *austrina* (see generic description) but possesses a bilobed dorsomedial process on the uncus as in *mufindiae*.

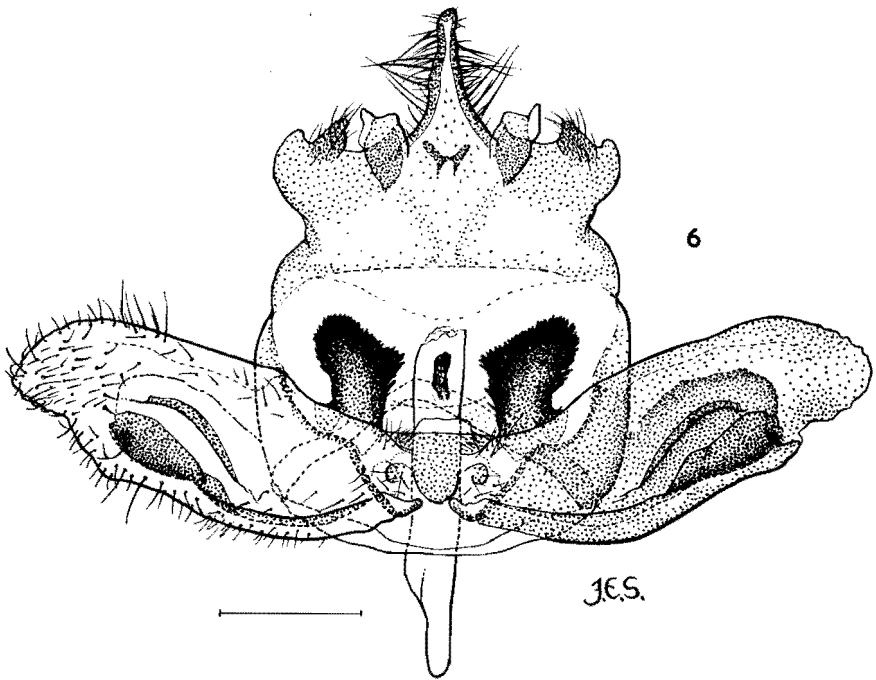
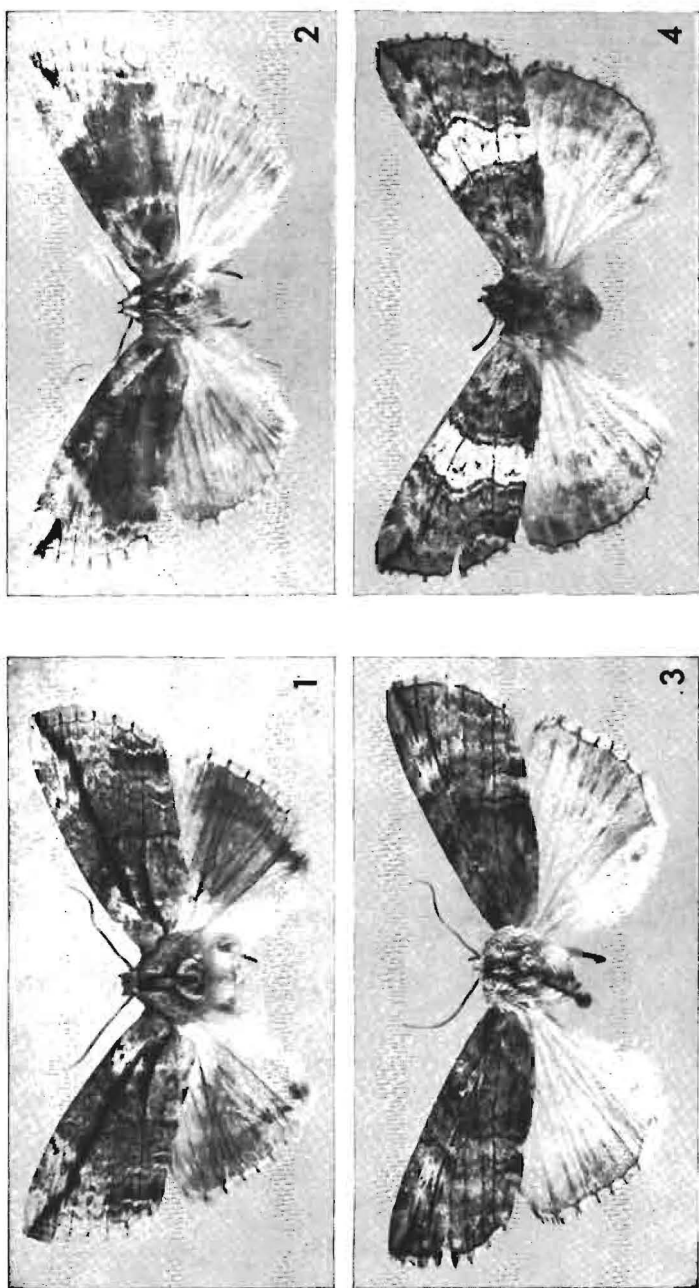


Fig. 6. *Aethiopsestis echinata* spec. nov., ♂-genitalia.

*Aethiopsestis mufindiae* spec. nov., plate 5, fig. 4, text-figs. 7 and 8

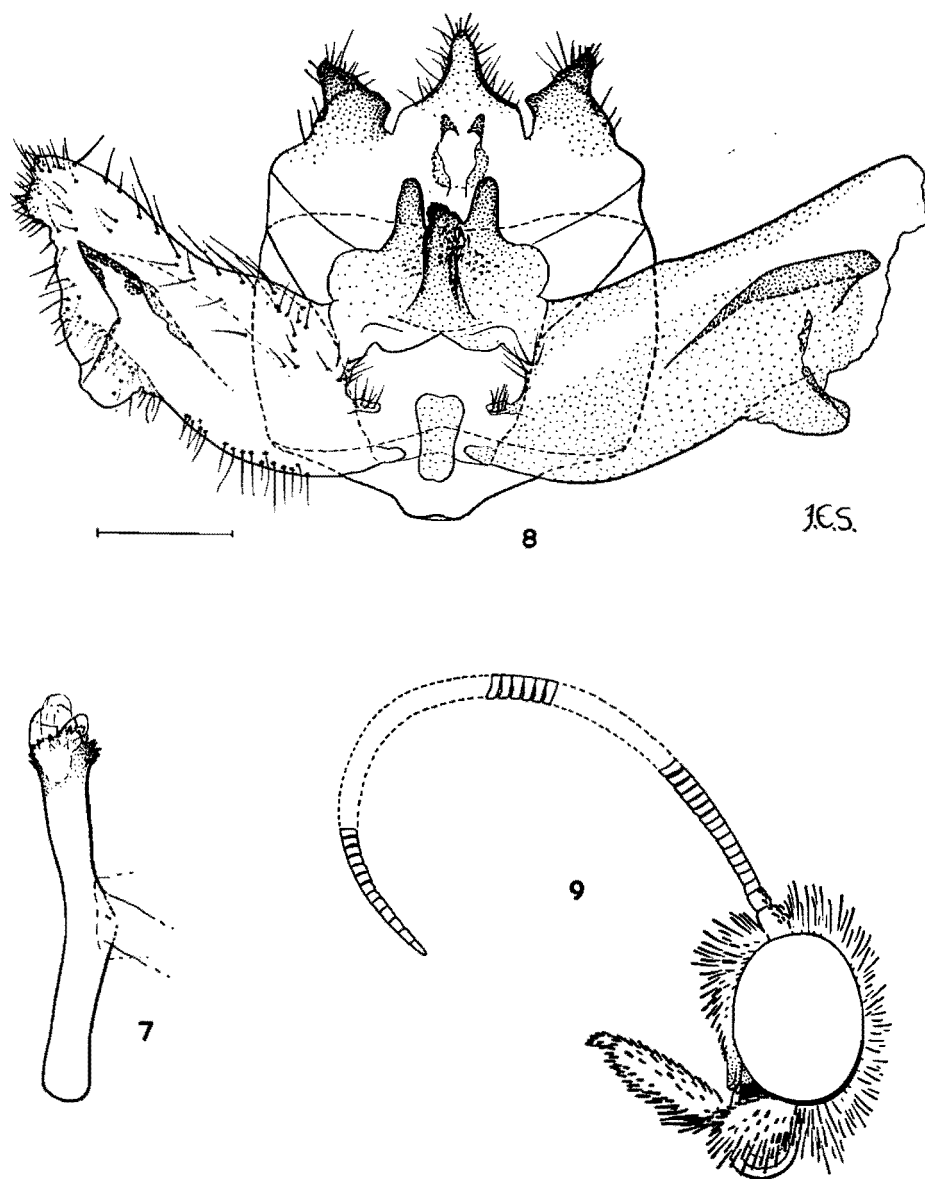
*DESCRIPTION:* ♂. Externally similar to *austrina austrina* in most respects but differing in the following. Medial band of upper surface of fore wing white, sharply edged with dark grey-brown; three dark fascia present on upper surface of hindwing.

PLATE 5



*Aethiopsestis* species

Figs. 1 and 2. *Ae. austrina nebulosa* subsp. nov. 1. ♂-paratype; 2. ♂-holotype.  
Fig. 3. *Ae. echinata* spec. nov., ♂-holotype. Fig. 4. *Ae. mufindiae* spec. nov., ♂-holotype.



Figs. 7 and 8. *Aethiopsestis mufindiae* spec. nov., 7. aedeagus, 8. body of genitalia; 9. *Ae. austrina* spec. nov., lateral view of head.

♂-GENITALIA: sacculus of valve with one elongate carina and irregularly shaped marginal carina; anellus a medial trilobed plate, uncus with three setose posterior processes and single bilobed dorsomedial process; apex of aedeagus with numerous stout spines, vesica unornamented.

♀. Not known.

Measurements: ♂, 22.0 mm (1).

Material examined: ♂-Holotype, Mufindi (Tanganyika), 1954 (P. Burdon); Thyatiridae genitalia slide No. 40; B. M. negative No. 36942; in the British Museum (Natural History).

Other material: A male specimen from the type-locality collected by A. Townsend in 1954 (in the Coryndon Museum, Nairobi) may prove to be conspecific with the holotype, but at present can be only doubtfully identified as *mufindiae*. The medial band on the upper surface of the fore wing is much narrower than in the holotype of *mufindiae* and in the ♂-genitalia there are differences in the proportions of the valves, uncus, juxta and anellus.

DISTRIBUTION: Known only from Tanganyika.

AFFINITIES: Allied to *austriana* and *echinata* but probably standing somewhat apart from *austriana* and *echinata* (see generic description).

#### ACKNOWLEDGEMENTS

My attention was first drawn to the presence of Thyatiridae in the Ethiopian Region by Professor Dr S. G. Kiriakoff (University of Gent, Belgium) who sent me two specimens that Dr E. C. G. Pinhey (National Museum, Bulawayo) had tentatively identified as Thyatiridae several years ago. Much of the material of the nominate species was made available to me through the kindness of Mr B. D. Barnes of Umtali (S. Rhod.) who has also presented a holotype and three paratypes to the British Museum (Natural History). Mr R. H. Carcasson has been, as usual most helpful and sent me on loan all the Thyatiridae specimens in the Coryndon Museum, Nairobi. Dr L. Vári (Transvaal Museum, Pretoria) examined the collections under his care for possible Thyatiridae and kindly offered to arrange publication of the present paper in this journal. Mr K. Werny (Saarbrücken University), who is preparing a paper on the Thyatiridae of the World generously lent me drawings of genera possibly related to *Aethiopsestis* and discussed (in correspondence) the systematic position of this new genus. The drawings initialled "J.E.S." were made by Mrs J. E. Saunders.

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